The Australian Carbon Pricing Mechanism: Promise and Pitfalls on the Pathway to a Clean Energy Future

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I. INTRODUCTION

A major issue facing efforts to transition from high carbon to low carbon ("clean energy") sources in the United States is the lack of well-developed legal and policy "infrastructure" to facilitate this transition.[1] This Article considers the lessons for

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1. *See Conference Themes: Legal & Policy Pathways for Energy Innovation*, U. MINN., CONSORTIUM ON L. & VALUES HEALTH, ENV'T & LIFE SCI., http://consortium.umn.edu/lecturesconferences/conferences/lppei/themes/

developing such infrastructure from Australia's recent experience in introducing and implementing a national carbon pricing mechanism. This mechanism was intended to be the keystone of broader national policy arrangements to secure a "clean energy future" for the nation.[2] Although there are significant differences between the legal arrangements governing energy generation and distribution in the United States and Australia (for example, the latter has a national electricity market supported by cooperative federal-state laws),[3] there are yet many similarities between the two countries that enhance the potential for cross-jurisdictional learning.[4] In particular, both countries are leading per capita emitters of greenhouse gases (GHGs),[5] with significant emissions sourced from their respective energy sectors,[6] which

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home.html (last visited Oct. 5, 2013). *See generally* Hari M. Osofsky & Hannah J. Wiseman, *Dynamic Energy Federalism*, 72 MD. L. REV. 773, 773 (2013) (examining the United States energy system as a whole).

2. *See* GREG COMBET, MINISTRY FOR CLIMATE CHANGE & ENERGY EFFICIENCY, SECURING A CLEAN ENERGY FUTURE: IMPLEMENTING THE AUSTRALIAN GOVERNMENT'S CLIMATE CHANGE PLAN 5 (2012).

3. *See National Electricity Act 1996* (SA) (Austl.). The National Electricity Law (NEL) is contained in a Schedule to this state statute. *Id*. at 22–187. It is taken up uniformly across the jurisdictions participating in the National Electricity Market (NEM) by application statutes. *See, e.g.*, *National Electricity Act 2005* (Vic) (Austl.). The same applies to the legislation supporting institutions and the regulations and rules under the principal Act. *See National Electricity Regulations 1996* (SA) (Austl.); National Electricity Rules Version 55, *National Electricity Act 1996* (SA) (Austl.); *see also Electricity Market*, AUSTL. ENERGY MARKET COMM'N, http://www.aemc.gov.au/electricity/electricity-market.html (last visited Sept. 30, 2013) ("The National Electricity Market (NEM) is a wholesale exchange for electricity for the Commonwealth adjacent areas and those States and Territories that are electrically connected."). *See generally* REGULATORY ASSISTANCE PROJECT, ELECTRICITY REGULATION IN THE US: A GUIDE (2011), *available at* http://www.raponline.org/document/download/id/645 (providing an overview of the U.S. electricity regulation system).

4. *See* INT'L ENERGY AGENCY, CO_2 EMISSIONS FROM FOSSIL FUEL COMBUSTION HIGHLIGHTS 99 (2013).

5. *See id.* In 2010, U.S. emissions from the energy sector stood at 17.31 tons CO_2 per capita whereas Australia's were 17.00 tons CO_2 per capita. *Id.* These levels were exceeded only by Luxembourg and oil-producing nations in the Middle East. *Id*. at 101.

6. *See* ENVTL. PROT. AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2011, at 3–1 (2013) ("Energy-related activities were the primary sources of U.S. anthropogenic greenhouse gas emissions, accounting for 85.7 percent of emissions on a . . . CO_2-equivalent basis in 2011."). In Australia, the share of emissions produced from the energy sector in 2010 was 76.9%. AUSTL. DEP'T OF CLIMATE CHANGE & ENERGY EFFICIENCY,

remain heavily dependent on fossil fuels (coal, natural gas, and petroleum) for energy supply.[7] In addition, both countries have legal systems based upon common law foundations, embedded within a federal matrix of national and state laws relevant to issues of energy production, environmental protection, and climate change.[8]

In Part II, this Article discusses the policy background to, and main elements of, the Australian carbon pricing mechanism. The carbon pricing mechanism was introduced by federal legislation enacted in 2011, and came into effect on July 1, 2012.[9] Despite the scheme being in its infancy, there have been some indications of positive change in the Australian energy sector, consequent upon introduction of a nationwide carbon price.[10] In addition, the Australian government under former Prime Minister Gillard vigorously pursued deals with other countries to link to their emissions trading schemes in an effort to expand the effectiveness of the carbon pricing mechanism.[11] More broadly, the introduction of the Australian

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AUSTRALIAN NATIONAL GREENHOUSE ACCOUNTS: NATIONAL INVENTORY REPORT 2010, at 28 (2012) (showing that stationary energy, transportation, and fugitive emissions from fuel comprised 54.1%, 15.3%, and 7.5%, respectively).

7. *See* ENVTL. PROT. AGENCY, *supra* note 6, at ES-17 ("In 2011, approximately 87 percent of the energy consumed in the United Sates . . . was produced through the combustion of fossil fuels."); *cf.* AUSTL. DEP'T OF CLIMATE CHANGE & ENERGY EFFICIENCY, *supra* note 6, at 37 (demonstrating an increase in emissions from the combustion of solid fossil fuels, gaseous fossil fuels, and liquid fossil fuels).

8. *See generally* LEE GODDEN & JACQUELINE PEEL, ENVIRONMENTAL LAW: SCIENTIFIC, POLICY AND REGULATORY DIMENSIONS (2010) (providing a general introduction to the Australian system); HARI OSOFSKY & LESLEY MCALLISTER, CLIMATE CHANGE: LAW AND POLICY (2012) (providing an overview of the system in the U.S.); RONALD H. ROSENBERG, HOLLY DOREMUS & ALBERT C. LIN, ENVIRONMENTAL POLICY LAW: PROBLEMS, CASES AND READINGS (6th ed., 2012); ALEXANDER ZAHAR, JACQUELINE PEEL & LEE GODDEN, AUSTRALIAN CLIMATE LAW IN GLOBAL CONTEXT (2012) (providing a wide-ranging guide to climate change law in Australia and internationally); *Federal Oversight of Electricity Markets and Infrastructure*, U.S. GOV'T ACCOUNTABILITY OFF., http://www.gao.gov/key_issues/federal_oversight_of_electricity_markets_and_infrastructure/issue_summary#t=0 (last visited Sept. 30, 2013) (describing the federal government's role in the electricity industry).

9. *Clean Energy Act 2011* (Cth) (Austl.); *see also Clean Energy Regulator Act 2011* (Cth) (Austl.); *Climate Change Authority Act 2011* (Cth) (Austl.).

10. *See infra* Part II.C.

11. *See* Robert Stowe, *COP 18 and the Future of International Climate Policy*, THEENERGYCOLLECTIVE (Dec. 11, 2012), http://theenergycollective.com/robertstowe/155426/cop-18-and-future-international-climate-policy.

scheme led to the development of a sophisticated institutional infrastructure for supporting the country's clean energy transition, including the establishment of new regulatory and advisory bodies.[12] With the September 2013 election of a conservative federal government led by Prime Minister Tony Abbott, this infrastructure, and the carbon pricing mechanism itself, may be short-lived.[13] However, this does not detract from the lessons Australia's carbon pricing experiment offers for the United States, and indeed, may lend them added poignancy.[14]

Part III discusses the early experience with the Australian scheme and highlights lessons for other countries, such as the United States, contemplating legislative and policy interventions to promote a clean energy transition. In some cases, these lessons relate to promising elements of the Australian scheme. In other cases, they serve to illustrate some of the pitfalls of policy development in this field. Four key lessons will be discussed, concerning:

- Establishing the right carbon price to drive a clean energy transition in the energy sector;
- Designing assistance and compensation measures under the scheme to ensure "polluters pay" and society does not end up "paying" major GHG polluters;
- Insulating the scheme, as far as possible, from politics; and
- Establishing a "regulatory mix" of policies that does not view carbon pricing alone as a panacea.[15]

II. THE AUSTRALIAN CARBON PRICING MECHANISM

The Australian carbon pricing mechanism, introduced via federal legislation in 2011, represented the culmination of over two decades of policy debate in Australia concerning measures to address climate change and energy sector transformation.[16]

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12. *See* MARTIN FERGUSON, MINISTER FOR RES., ENERGY & TOURISM, DRAFT ENERGY WHITE PAPER: STRENGTHENING THE FOUNDATIONS FOR AUSTRALIA'S ENERGY FUTURE 100–49 (2011).

13. *See infra* Part III.C.

14. *See infra* Part III.

15. *See* Neil Gunningham & Darren Sinclair, *Regulatory Pluralism: Designing Policy Mixes for Environmental Protection*, 21 LAW & POL'Y 49, 68–69 (1999).

16. This debate started with the release of a series of discussion papers by the Australian Greenhouse Office in the late 1990s. *See* AUSTL. GREENHOUSE

The carbon pricing mechanism is designed to implement Australia's international obligations as a party to the United Nations Framework Convention on Climate Change (UNFCCC)[17] and the Kyoto Protocol.[18] Indeed, Australia is one of several countries that have agreed to participate in a second commitment period under the Kyoto Protocol,[19] which would place the country under a binding international obligation to reduce emissions by at least five percent below 2000 levels over the period from 2013 to 2020.[20] This is a major point of

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OFFICE, NATIONAL EMISSIONS TRADING: ESTABLISHING THE BOUNDARIES, DISCUSSION PAPER 1 (1999); AUSTL. GREENHOUSE OFFICE, NATIONAL EMISSIONS TRADING: ISSUING THE PERMITS, DISCUSSION PAPER 2 (1999) [hereinafter DISCUSSION PAPER 2]; AUSTL. GREENHOUSE OFFICE, NATIONAL EMISSIONS TRADING: CREDITING THE CARBON, DISCUSSION PAPER 3 (1999) [hereinafter DISCUSSION PAPER 3]; AUSTL. GREENHOUSE OFFICE, NATIONAL EMISSIONS TRADING: DESIGNING THE MARKET, DISCUSSION PAPER 4 (1999).

17. *See Clean Energy Act 2011* (Cth) s 3(1)(i) (Austl.).

18. *See id.* at s 3(1)(ii). Australia ratified the Protocol in December 2007. *Id.* at s 5. Its first commitment period target under the Protocol, running from 2008–2012, had a quantified limitation level of 108% of 1990 GHG emissions levels. *See* DISCUSSION PAPER 3, *supra* note 16, at 22.

19. *See* Conference of the Parties Serving As the Meeting of the Parties to the Kyoto Protocol, Nov. 6–Dec. 8, 2012, *Amendment to the Kyoto Protocol Pursuant to Its Article 3, Paragraph 9 (the Doha Amendment)*, U.N. Doc. FCCC/KP/CMP/2012/13/Add.1, Annex I (Feb. 28, 2013). Prior to the federal election in September 2013, Tony Abbott, now Prime Minister, indicated his party's "in principle" support for Australia's participation in a second commitment period under the Kyoto Protocol but announced no position about ratification. *See* Sarah Clarke & Andrew Greene, *Environment Policy: Where the Parties Stand*, ABC NEWS (Sept. 6, 2013, 3:05 PM), http://www.abc.net.au/news/2013-06-26/environment-policy-federal-election-2013/4761774.

20. *See* Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol, Nov. 6–Dec. 8, 2012, *Doha Amendment to the Kyoto Protocol to the United Nations Framework Convention on Climate Change*, U.N. Doc. C.N.718.2012.TREATIES-XXVII.7.c, Art. 1, Annex B (Dec. 8, 2012). This represents Australia's "unconditional" emissions reduction commitment. *Id.* at 3 n.3. The ambition of this target can be increased if certain conditions relating to the extent of global action are fulfilled. *Id* at 4. Included are conditions that there is a commitment from major developing countries to reduce their emissions, maintain a binding and credible global agreement, and existence of "broad, liquid carbon markets." *See* U.N. Framework Convention on Climate Change, *Ad Hoc Working Group on Further Commitments for Annex I Parties Under the Kyoto Protocol*, U.N. Doc. FCCC/KP/AWG/2012/MISC.1/Add.2, 6 (Nov. 26, 2012), *available at* http://unfccc.int/resource/docs/2012/awg17/eng/misc01a02.pdf. In October 2013, the Climate Change Authority issued a draft Targets and Progress Review report recommending much deeper emissions cuts of 15%–25% by 2020. *See* CLIMATE CHANGE AUTH., CTH AUSTL., REDUCING AUSTRALIA'S GREENHOUSE GAS EMISSIONS—TARGETS AND PROGRESS REVIEW, DRAFT

difference from the United States, which is not a party to the Kyoto Protocol and has consistently refused to accept binding international emissions reduction targets in the absence of major developing country emitters (e.g., China, India) doing likewise.[21]

Policy discussions in Australia over domestic mechanisms to reduce GHG emissions from the energy sector coalesced, fairly early on, around the need for an economic incentive approach to internalize the costs of the nation's dependence on the use of emissions-intensive resources and energy production.[22] Also early on, an emissions trading scheme (ETS) emerged as the clearly preferred economic policy option for putting a price on greenhouse gas (carbon) emissions, rather than a carbon tax.[23] An ETS controls the number of permits made available to authorize emissions of GHGs, with that number progressively reduced over time in order to reduce overall levels of emissions.[24] Permits issued up to the level of the emissions cap can be traded amongst market participants, which facilitates emissions reduction occurring at the site(s) of lowest cost.[25] By contrast, a carbon tax effectively places a levy

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REPORT (2013), *available at* http://climatechangeauthority.gov.au/sites/climatechangeauthority.gov.au/files/files/Target-Progress-Review/cca-targets-and-progress-report.pdf. However, the Abbott government has indicated it will not be increasing the Australian 2020 target beyond a 5% reduction "in the absence of very serious like-binding commitments from other countries . . . ." Tom Arup, *Tony Abbott Stifling Australia's Climate Change Ambitions*, THE AGE (Nov. 13, 2013), http://www.theage.com.au/federal-politics/political-opinion/tony-abbott-stifling-australias-climate-change-ambitions-20131113-2xfm3.html.

21. *See* S. REP. No. 105-54 (1997) (expressing the sense of the Senate of the conditions for the United States becoming a signatory to any international agreement on greenhouse gas emissions under the United Nations Framework Convention on Climate Change).

22. *See* DISCUSSION PAPER 2, *supra* note 16, at 47. The previous conservative federal government under Prime Minister John Howard (in which current Prime Minister Tony Abbott was a minister) belatedly endorsed a market-based approach and introduction of an emissions trading scheme prior to the 2007 election at which the Howard government was defeated. *See* ZAHAR ET AL., *supra* note 8, at 155–57.

23. *See* Nathaniel O. Keohane, *Cap-and-Trade Is Preferable to a Carbon Tax*, *in* CLIMATE FINANCE: REGULATORY AND FUNDING STRATEGIES FOR CLIMATE CHANGE AND GLOBAL DEVELOPMENT 57 (R.B. Stewart, B. Kingsbury & B. Rudyk eds., 2009).

24. *See id.* at 57–58.

25. This is commonly known as a cap-and-trade scheme. *See* U.N. ENV'T PROGRAMME, CLIMATE AND TRADE POLICIES IN A POST-2012 WORLD 72 (2009),

on the price of GHG-intensive products, such as coal-fired electricity, which is intended to reflect the social cost of the associated carbon pollution.[26]

The trend towards adoption of a cap-and-trade ETS in Australian climate policy was reinforced by the influential Garnaut Reports issued in 2008 and 2011 by the previous government's principal climate change advisor, Professor Ross Garnaut.[27] In his 2008 report, Professor Garnaut recommended the establishment of an ETS as "the best approach for Australia" to reduce its domestic emissions.[28] Although some economists argue a carbon tax offers an alternative policy option to ETS for emissions reduction at lowest cost,[29] Garnaut emphasized the advantages of an ETS in providing greater certainty in meeting emissions reduction targets and the capacity for international linkage with other schemes.[30] In its efforts to introduce policies to reduce GHG emissions, the U.S. government—under the Obama administration—also initially favored an economic incentive approach employing a cap-and-trade ETS, although 2009 legislation to introduce such a scheme stalled in Congress.[31] A cap-and-trade ETS was established by the State of California, commencing operation in

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available at http://www.unep.org/climatechange/Portals/5/documents/ClimateAndTradePoliciesPost2012_en.pdf. The alternative model for an ETS, described as baseline and credit, has been less widely used, although it features in Australia's earliest ETS, the New South Wales Greenhouse Gas Abatement scheme which commenced trading on January 1, 2003. *See* ROSEMARY LYSTER & ADRIAN BRADBROOK, ENERGY LAW AND THE ENVIRONMENT 141–44 (2006).

26. *See* Gilbert E. Metcalf & David Weisbach, *The Design of a Carbon Tax*, 33 HARV. ENVTL. L. REV. 499, 509–12 (2009). *See generally* Cameron Hepburn, *Regulation by Prices, Quantities or Both: A Review of Instrument Choice*, 22 OXFORD REV. OF ECON. POL'Y 226 (2006) (examining the advantages of various policy instruments for climate change regulation).

27. *See* ROSS GARNAUT, THE GARNAUT CLIMATE CHANGE REVIEW, at xxxii (2008) [hereinafter GARNAUT (2008)]; ROSS GARNAUT, THE GARNAUT REVIEW 2011: AUSTRALIA IN THE GLOBAL RESPONSE TO CLIMATE CHANGE 171 (Wilton Hanover ed., 2011) [hereinafter GARNAUT (2011)].

28. *See* GARNAUT (2008), *supra* note 27, at xxxii.

29. *See* William Pizer, *Combining Price and Quantity Controls to Mitigate Climate Change*, 85 J. PUB. ECON. 409, 422–24 (2002).

30. *See* GARNAUT (2008), *supra* note 27, at xxxii.

31. *See* American Clean Energy and Security Act, H.R. 2454, 111th Cong. (2009).

January 2013.[32] While market-based measures for reducing emissions—most likely in the form of a carbon tax—remain under discussion at the federal level in the United States,[33] in the absence of climate change action by Congress, the President has committed to pursue a regulatory path.[34] Even so, it is possible that proposed regulatory measures issued by the federal Environmental Protection Agency (EPA) for GHG emissions from existing sources will allow scope for states to devise their own implementation plans, which may follow California's lead in adopting a cap-and-trade program.[35]

A. A HYBRID SCHEME

The Australian carbon pricing mechanism as legislated in 2011 is in fact a hybrid scheme, incorporating elements of both ETS and carbon tax models.[36] The hybrid design followed the

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32. *See* CAL. CODE REGS. tit. 17, §§ 95801–96022 (2013); CAL. AIR RES. BD., CLIMATE CHANGE SCOPING PLAN 30–38 (2008).

33. A draft Bill was released for discussion by Representative Henry A. Waxman, Senator Sheldon Whitehouse, Representative Earl Blumenauer, and Senator Brian Schatz. Press Release, House Comm. on Energy & Commerce, Waxman, Whitehouse, Blumenauer and Schatz Release Carbon Price Discussion Draft (Mar. 12, 2013), *available at* http://democrats.energycommerce.house.gov/index.php?q=news/waxman-whitehouse-blumenauer-and-schatz-release-carbon-price-discussion-draft. *See generally* CONG. BUDGET OFFICE, EFFECTS OF A CARBON TAX ON THE ECONOMY AND THE ENVIRONMENT (2013) (report prepared by the Congressional Budget Office at Rep. Waxman's request, as Ranking Member of the House Committee on Energy and Commerce).

34. *See generally* EXEC. OFFICE OF THE PRESIDENT, THE PRESIDENT'S CLIMATE ACTION PLAN (2013), *available at* http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf (describing the President's Climate Action Plan). Under the Plan, the President has issued a Presidential Memorandum directing the EPA to issue "carbon pollution standards" for both new and existing power plants. *Id.* at 6. The EPA proposed standards for new power plants several months later. *See* Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units (proposed Sept. 20, 2013) (to be codified at 40 C.F.R. pt. 60), *available at* http://www2.epa.gov/sites/production/files/2013-09/documents/20130920proposal.pdf. The President has directed the EPA to develop standards for existing power plants by June 2015. *See* EXEC. OFFICE OF THE PRESIDENT, *supra,* at 6; *see also* JAMES E. MCCARTHY, CONG. RESEARCH SERV., EPA STANDARDS FOR GREENHOUSE GAS EMISSIONS FROM POWER PLANTS: MANY QUESTIONS, SOME ANSWERS 13 (2013).

35. *See* Jonas Monast et al., *Regulating Greenhouse Gas Emissions from Existing Sources: Section 111(d) and State Equivalency*, 42 ENVTL. L. REP. 10206, 10206–08 (2012).

36. *See Clean Energy Act 2011* (Cth) (Austl.).

recommendations of the Garnaut Reports.[37] In his 2008 Report, Professor Garnaut recommended inclusion of a "transition period" with fixed-price permits in the ETS up until the end of 2012 to accommodate uncertainty over the shape of post-2012 international climate change arrangements.[38] In the interim, between issue of the 2008 and 2011 reports, the Australian government attempted to legislate an ETS with a one-year fixed-price period,[39] known as the Carbon Pollution Reduction Scheme (CPRS).[40] That legislation did not attract sufficient support in the Senate to pass, due largely to the failure of the 2009 international negotiations in Copenhagen to deliver a new climate change agreement to replace the Kyoto Protocol.[41]

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37. *See* Explanatory Memorandum, Clean Energy Bill 2011 (Cth) (Austl.) at 19–20.

38. *See* GARNAUT (2008), *supra* note 27, at 321–22. The Report recommended a starting carbon price of twenty AUD per ton. *Id*. at 350.

39. Political compromises following the global financial crisis saw the starting price lowered to ten AUD per ton. *See* Carbon Pollution Reduction Scheme Bill 2009 [No 2] (Cth), s 89 (Austl.).

40. The package of Bills included the following: Australian Climate Change Regulatory Authority Bill 2009 (Cth) (Austl.); Carbon Pollution Reduction Scheme Amendment (Household Assistance) Bill 2009 (Cth) (Austl.); Carbon Pollution Reduction Scheme Bill 2009 (Cth) (Austl.); Carbon Pollution Reduction Scheme (Charges - Customs) Bill 2009 (Cth) (Austl.); Carbon Pollution Reduction Scheme (Charges - Excise) Bill 2009 (Cth) (Austl.); Carbon Pollution Reduction Scheme (Charges - General) Bill 2009 (Cth) (Austl.); Carbon Pollution Reduction Scheme (Consequential Amendments) Bill 2009 (Cth) (Austl.); Carbon Pollution Reduction Scheme (CPRS Fuel Credits) Bill 2009 (Cth) (Austl.); Carbon Pollution Reduction Scheme (CPRS Fuel Credits) (Consequential Amendments) Bill 2009 (Cth) (Austl.).

41. *See* Explanatory Memorandum, Clean Energy Bill 2011 (Cth) (Austl.) at 20. Instead, the conference produced a political agreement known as the Copenhagen Accord under which countries notified their own self-determined emissions reduction pledges. *See* U.N. Framework Convention on Climate Change, *Rep. of the Conference of the Parties on its 15th Sess.*, Dec. 7–19, U.N. Doc. FCCC/CP/2009/11/Add.1, 4–7 (Mar. 30, 2010). This process was formalized the subsequent year in the Cancún agreements. *See* U.N. Framework Convention on Climate Change, *Decision 1/CP16, The Cancún Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention*, Nov. 29–Dec. 10, 2010, U.N. Doc. FCCC/CP/2010/7/Addl.1 (Mar. 15, 2011); *see also* U.N. Framework Convention on Climate Change, *Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action*, Nov. 28–Dec. 9, 2011, U.N. Doc. FCCC/CP/2011/L.10, para. 2., (Dec. 11, 2011). Fifty-nine countries have now notified non-binding emissions reduction pledges and national mitigation actions under these agreements. *See* U.N. ENV'T PROGRAM, THE EMISSIONS GAP REPORT 2012: A UNEP SYNTHESIS REPORT 15–16 (2012). These pledges

In the political turmoil that followed in the Australian parliament, Prime Minister Kevin Rudd and Opposition Leader Malcolm Turnbull were each replaced by their respective parties.[42] The new Labor Party leader, Julia Gillard, narrowly won the subsequent election in 2010, but was only able to form a government relying on a coalition with the Australian Greens Party and independents.[43] Having insisted during the 2010 election campaign that her government would not move to introduce a carbon tax, the new Prime Minister reversed this position post-election as part of her agreement with the Greens.[44] Consequently, a new multiparty process was established to consider the parameters for a new national climate policy,[45] and Professor Garnaut was commissioned to update his 2008 report.[46]

The *Garnaut Review 2011* largely reaffirmed the recommendations of the 2008 Report, including the recommendation for introduction of an ETS with an initially fixed (and rising) carbon price, in order to promote "steadiness,"

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and commitments did not change significantly during 2012. *See* U.N. ENV'T PROGRAM, THE EMISSIONS GAP REPORT 2013: A UNEP SYNTHESIS REPORT, at xii (2013).

42. *See* James West, *How the Carbon Tax Became the 'Killing Fields' of Australian Politics*, THE GUARDIAN (Sept. 6, 2013, 4:00 PM), http://www.theguardian.com/environment/2013/sep/06/election-2013-carbon-price-australian-politics.

43. *See* Alison Rourke, *Australian PM Julia Gillard Signs Pact with Greens*, THE GUARDIAN (Sept. 1, 2010), http://www.theguardian.com/world/2010/sep/01/julia-gillard-australia-greens-deal; Alison Rourke, *Julia Gillard to Lead Australian Government*, THE GUARDIAN (Sept. 7, 2010), http://www.theguardian.com/world/2010/sep/07/julia-gillard-australian-minority-government.

44. *See* West, *supra* note 42.

45. This process occurred through the Multi-Party Climate Change Committee (MPCCC). The MPCCC consisted of politicians from the Labor party, Greens party and independent representatives. In July 2011, the Committee released its agreement on the parameters of a national climate policy for Australia. *See* CTH AUSTL., MULTI-PARTY CLIMATE CHANGE COMMITTEE CLEAN ENERGY AGREEMENT (2011), *available at* http://www.climatechange.gov.au/sites/climatechange/files/documents/04_2013/MPCCC_Clean-energy_agreement-20110710-PDF.pdf; *Multi-Party Climate Change Committee Clean Energy Agreement*, DEP'T ENV'T, CTH AUSTL., http://www.climatechange.gov.au/climate-change/multi-party-climate-change-committee/resources/multi-party-climate-change-committee-clean-energy-agreement (last visited Oct. 10, 2013).

46. *See Panel of Experts Multi-Party Climate Change Committee*, DEP'T ENV'T, CTH AUSTL., http://www.climatechange.gov.au/climate-change/multi-party-climate-change-committee/panel-experts (last visited Oct. 10, 2013).

allow firms to become familiar with the scheme, and to establish and test the necessary institutional and administrative infrastructure.[47] This recommendation was adopted by the Multi-Party Climate Change Committee and by the Gillard government in legislation for the scheme.[48] Under the *Clean Energy Act 2011*, the carbon-pricing mechanism incorporates a fixed-price period (effectively a carbon tax)[49] for the first three years with entities covered by the scheme required to pay a set carbon price per ton of carbon dioxide equivalent (CO_2-eq) emitted.[50] From mid-2015, the scheme is scheduled to transition to a full ETS ("the floating price period") with the carbon price determined by the buying and selling of emissions permits known as carbon units.[51] Adoption of this hybrid model seemed to reflect an acknowledgement in policy and political circles in Australia that, in the absence of a robust international agreement for carbon trading, it is best to begin to effect a clean energy transition by way of a simpler, more workable scheme.[52]

B. SCHEME DESIGN ELEMENTS

Designing an effective ETS—although often treated as a technical matter—in practice is "an immensely complex task" involving significant political considerations.[53] Design of the Australian carbon pricing mechanism was informed by policy advice from the Garnaut Reviews,[54] coupled with an intensive

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47. *See* GARNAUT (2011), *supra* note 27, at 70.

48. *See generally Clean Energy Act 2011* (Cth) (Austl.) (enacted legislation for the scheme).

49. *Id.* at s 100. While not formally a carbon tax in taxation law terms, the fixed price period is popularly known as the carbon tax in Australia given the obligation on entities covered by the scheme to pay a set price per ton of CO_2-eq emitted. *See* Lisa Caripis et al., *Australia's Carbon Pricing Mechanism*, 2 CLIMATE L. 583, 585–86 (2011).

50. *See Clean Energy Act 2011* (Cth) s 100 (Austl.). The carbon price for 2012–2013 is 23 AUD per ton of CO_2-eq, rising by 2.5% each year for the 2013–2014 and 2014–2015 years. *Id.*

51. *Id.*

52. *See* ZAHAR ET AL., *supra* note 8, at 196–97.

53. *See* Rosemary Lyster, *Chasing Down the Climate Change Footprint of the Private and Public Sectors: Forces Converge—Part II*, 24 ENVTL. & PLANNING L.J. 450, 454 (2007).

54. *See* ROSS GARNAUT, UPDATE PAPER SIX: CARBON PRICING AND REDUCING AUSTRALIA'S EMISSIONS 11–14 (2011) [hereinafter GARNAUT, UPDATE PAPER SIX]; GARNAUT (2008), *supra* note 27, at xiii.

expert- and public-consultation process.[55] One prominent Australian commentator hailed the resulting scheme as "innovative" in its design, and a potential "model for other countries' emerging carbon pricing schemes."[56] Key features of the scheme include its broad coverage of emissions-producing sectors, its provision for the use of domestically- and internationally-sourced offsets, and the relatively strong role it envisions for independent institutions in advising the government on the future development of the scheme.[57]

1. Coverage of the Carbon Pricing Mechanism

The carbon-pricing mechanism covers around sixty percent of Australia's domestic emissions and imposes obligations on over 350 large emitters, known as "liable entities."[58] These entities are liable to surrender carbon units commensurate with their "covered emissions," which are those GHGs[59] released into the atmosphere in Australia as a direct result of the operation of the entities' facilities.[60] Notably, only direct or

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55. *See* DEP'T OF CLIMATE CHANGE, CTH AUSTL., CARBON POLLUTION REDUCTION SCHEME, GREEN PAPER (2008); DEP'T OF CLIMATE CHANGE, CTH AUSTL., CARBON POLLUTION REDUCTION SCHEME: AUSTRALIA'S LOW POLLUTION FUTURE, WHITE PAPER (2008), *available at* http://pandora.nla.gov.au/pan/102841/20090728-0000/ www.climatechange.gov.au/whitepaper/report/index.html. The Green and White papers formed the basis of the CPRS, many features of which were carried forward into the carbon pricing mechanism. *Id.* at xxii. *See also Panel of Experts*, *supra* note 46 (showcasing the panel of experts the government consulted).

56. *See* Frank Jotzo, *Australia's Carbon Price*, 2 NATURE CLIMATE CHANGE 475, 475 (2010).

57. *See id.*; Caripis et al., *supra* note 49, at 594.

58. *See Liable Entities Public Information Database (LEPID) for 2012–13 Financial Year,* AUSTL. GOV'T CLEAN ENERGY REGULATOR (Nov. 10, 2013, 2:43 PM), http://www.cleanenergyregulator.gov.au/Carbon-Pricing-Mechanism/Liable-Entities-Public-Information-Database/LEPID-for-2012-13-Financial-year/Pages/default.aspx [hereinafter *LEPID for 2012–13 Financial Year*].

59. *See Clean Energy Act 2011* (Cth) s 5 (Austl.); *Greenhouse and Energy Reporting Act* 2007 (Cth) s 7 (Austl.) (defining reference to "greenhouse gas"). Therefore, "greenhouse gas" includes: carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons specified in the regulations, and perfluorocarbons specified in the regulations. *See* Caripis et al., *supra* note 49, at 586 n.18.

60. *See Clean Energy Act 2011* (Cth) s 14 (Austl.).

"scope 1" emissions from a facility are caught by the scheme.[61] This means that the carbon-pricing mechanism does not capture Australia's significant contribution to global GHG emissions deriving from the combustion of exported fossil fuels.[62]

Sectors of the Australian economy with obligations under the carbon-pricing mechanism include stationary energy, waste (e.g., landfills),[63] industrial processes, and extractive operations for coal, oil, and gas that result in fugitive emissions.[64] Some parts of the transport sector are also covered—namely domestic aviation, domestic shipping, and rail transport—by way of an equivalent carbon price levied under fuel-tax legislation.[65] Emissions from cars and light commercial vehicles are not covered, and there is also an exemption applicable to emissions from fuel use in the agricultural, forestry, and fishing industries.[66] While emissions from the agricultural sector constituted 14.6% of Australia's total emissions in 2010,[67] they

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61. *See id.* at s 30(1). There is, however, a special provision that applies to suppliers and large users of natural gas to make them liable for the embedded emissions in this fuel where supplied or used in Australia. *Id.*

62. *See* CARBON TRACKER INITIATIVE, UNBURNABLE CARBON: AUSTRALIA'S CARBON BUBBLE 29 (2013). These "downstream" or "scope 3" emissions far exceed Australia's domestic emissions. *See id.* at 5. The need for governments and companies to account for "scope 3" emissions in development decisions in the energy sector has been a focus of climate change litigation in Australia. *See* Jacqueline Peel, *Climate Change Law: The Emergence of a New Legal Discipline*, 32 MELB. U. L. REV. 922, 940 (2008); Jacqueline Peel, *The Role of Climate Change Litigation in Australia's Response to Global Warming*, 24 ENVTL. & PLANNING L.J. 90, 100 (2007).

63. *See* Explanatory Memorandum, Clean Energy Bill 2011 (Cth) (Austl.) at 32. Emissions from waste in landfill prior to the commencement of the scheme on July 1, 2012 are exempt. *Clean Energy Act 2011* (Cth) s 30(9) (Austl.).

64. *See Clean Energy Regulations 2011* (Cth) reg 1.5 (Austl.).

65. *See* Clean Energy (Fuel Tax Legislation Amendment) Bill 2011 (Cth) (Austl.) at 6. These sectors pay an excise on fuel. The excise payable by the domestic aviation sector was set to be increased. *See* Cth Austl., *Transport Fuels*, CLEAN ENERGY FUTURE, http://www.qta.com.au/Content/Attachment/aust_govt_clean_energy_future_transportfuels_factsheet.pdf (last visited Nov. 20, 2013). Meanwhile, the tax credits available to marine and rail transport operators were to be reduced by an amount equivalent to the carbon price. *Id.*

66. *See* Clean Energy (Fuel Tax Legislation Amendment) Bill 2011 (Cth) s 43-8(4) (Austl.). The Gillard government proposed but did not legislate other measures to deal with emissions from heavy on-road vehicles. *See* COMBET, *supra* note 2, at 38.

67. *See* AUSTL. DEP'T OF CLIMATE CHANGE & ENERGY EFFICIENCY, *supra* note 6, at xii.

are specifically excluded from the carbon pricing mechanism.[68] Instead, these emissions are partly regulated under a separate scheme known as the Carbon Farming Initiative (CFI), which allows farmers to generate offsets that can be applied by liable entities to satisfy their liability under the carbon pricing mechanism.[69]

2. Offsets for Compliance Flexibility

Access to overseas credits and carbon markets are critical to the effectiveness of the Australian carbon pricing mechanism in achieving its emission-reduction targets of a 5% reduction from 2000 levels by 2020 and an 80% reduction from 2000 levels by 2050.[70] However, the scheme includes safeguards to ensure the domestic carbon market is not flooded with cheap international offsets derived from projects under the Kyoto Protocol's Clean Development Mechanism,[71] or newer arrangements for "Reducing Emissions from Deforestation and Forest Degradation in Developing Countries" (REDD).[72] For instance, liable entities are not permitted to surrender international offsets in the fixed-price phase of the scheme.[73] In the flexible ETS phase, strict qualitative restrictions are to

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68. *See Clean Energy Act 2011* (Cth) s 30(4) (Austl.).

69. *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth) s 53 (Austl.). This legislation will be retained and expanded by the incoming Abbott government. James Wight, *A Closer Look at Tony Abbott's Climate*, PRECARIOUS CLIMATE (Sept. 4, 2013), http://precariousclimate.com /2013/09/04/closer-look-tony-abbott-liberal-climate-policy-direct-action/. Rather than credits feeding into the carbon pricing mechanism, they will be available for purchase through the Emissions Reduction Fund that is the lynchpin of the Coalition's Direct Action policy. *Id.*

70. CTH AUSTL., STRONG GROWTH, LOW POLLUTION: MODELLING A CARBON PRICE, para. 5.21 (2011).

71. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 22 (1998). The Clean Development Mechanism allows firms in developed country Protocol parties to invest in clean energy and other sustainable emissions reduction projects in developing countries to generate carbon units known as Certified Emissions Reductions or CERs. *Id.* at art. 12.

72. *See About the UN-REDD Programme*, UN-REDD PROGRAMME, http://www.un-redd.org/AboutUN-REDDProgramme/tabid/102613/ Default.aspx (last visited Oct. 10, 2013).

73. CTH AUSTL., STARTING EMISSIONS TRADING ON 1 JULY 2014, POLICY SUMMARY 3 (2013), *available at* http://www.climatechange.gov.au/sites /climatechange/files/files/reducing-carbon/carbon-pricing-policy/cef-policy-summary-moving-ets.PDF.

apply to the use of international credits,[74] and there is also a quantitative limit of fifty percent for the period up until June 30, 2020.[75] With the agreement to link the Australian carbon-pricing mechanism to the European Union ETS (EU ETS), discussed further below, the use of non-EU ETS-sourced international units was further restricted to 12.5%.[76]

The situation pertaining to domestically-sourced offsets is different. Liable entities may use units generated under the CFI—for activities that store or reduce carbon in the Australian land sector—to discharge their liability in the flexible-price phase without restriction.[77] Similarly to the Californian cap-and-trade offsets regulations,[78] the CFI only allows for the generation of carbon credits from activities conducted under an approved methodology.[79] Proposals for new methodologies must be endorsed by an independent, expert Domestic Offsets Integrity Committee,[80] and must meet certain "offsets integrity standards."[81] Since the broad span of the CFI encompasses a large number of activities that remain

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74. Only offsets specified as "eligible international emissions units" under section 4 of the *Australian National Registry of Emissions Units Act 2011* may be used. *Australian National Registry of Emissions Units Act 2011* (Cth) s 4 (Austl.). This means that the following Kyoto units are permitted: allowances from the EU ETS, CERs from the Clean Development Mechanism, emission reduction units from the Joint Implementation Mechanism (ERUs), removal units on the basis of land use, land-use change, and forestry activities (RMUs), and during the first five years of the ETS, entities are allowed to use international units to cover only 50% of their emissions. *Clean Energy Act 2011* (Cth) s 133(7) (Austl.). Further restrictions on the type of Kyoto units that may be surrendered under the carbon pricing mechanism are set out in regulations designed to bring Australian requirements into line with EU criteria. *See Clean Energy Act 2011* (Cth) pt 6 (Austl.).

75. *Clean Energy Act 2011* (Cth) s 133(7E) (Austl.).

76. *Clean Energy Act 2011* (Cth) s 123A (Austl.), *amended by Clean Energy Amendment (International Emissions Trading and Other Measures) Act 2012* (Cth) s 79 (Austl.).

77. *See* Explanatory Memorandum, Clean Energy Bill 2011 (Cth) para. 4.66 (Austl.) ("In the flexible charge period, there will be no limit on the surrender of ACCUs.").

78. *See* CAL. CODE REGS. tit. 11, § 95976(e) (2013).

79. *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth) s 27(4)(b) (Austl.).

80. *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth) s 106(4)(b) (Austl.); *see* Rodney J. Keenan et al., *Science and the Governance of Australia's Climate Regime*, 2 NATURE CLIMATE CHANGE 477, 478 (2010).

81. *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth) s 106(4)(c) (Austl.).

scientifically untested and largely theoretical (e.g., biochar), it is critical to the integrity of the offsets that these safeguards are stringently applied.[82]

3. Institutional Infrastructure

Although an ETS is portrayed as a "market mechanism" for reducing emissions at lowest cost, all ETS in operation around the world have required substantial supplementary direct regulation to create the institutional and enforcement structure to enable effective functioning of the carbon market.[83] The Australian scheme followed this trend, with the establishment of several new institutions that reinforce the effectiveness and environmental integrity of the scheme.

The body with overall regulatory responsibility for the scheme—together with complementary measures such as the Australian Renewable Energy Target (RET) and the CFI—is the Clean Energy Regulator.[84] The Clean Energy Regulator is an independent federal authority, established by statute.[85] The Regulator's most important responsibilities include assessing emissions data to determine entities' liability,[86] allocating carbon units (which are comprised of fixed-price units, freely-allocated units for certain industries and auctioned units for use in the flexible phase),[87] operating the Australian National

82. Keenan et al., *supra* note 80, at 478; *see* Mae-Wan Ho, *Beware the Biochar Initiative*, PERMACULTURE NEWS (Nov. 18, 2010), http://permaculturenews.org/2010/11/18/beware-the-biochar-initiative/.

83. Leslie Stein, *The Legal and Economic Bases for an Emissions Trading Scheme*, 36 MONASH U. L. REV. 192, 211 (2010).

84. *See Clean Energy Regulator Act 2011* (Cth) pt 2 (Austl.).

85. *See id.* The Clean Energy Regulator will be retained by the Abbott government but its functions relating to the carbon pricing scheme will be removed. *How the Change in Government Could Affect You*, NORTON ROSE FULBRIGHT (Sept. 2013), http://www.nortonrosefulbright.com/knowledge/publications/104025/how-the-change-in-government-could-affect-you.

86. *Clean Energy Act 2011* (Cth) pt 5 (Austl.). The collection of emissions data is facilitated by the *National Greenhouse and Energy Reporting Act 2007*, which requires entities emitting GHG above a certain threshold to report their "scope 1" (direct) GHG emissions and "scope 2" emissions from electricity and energy use to the Clean Energy Regulator. *Id.*; *National Greenhouse and Energy Reporting Act 2007* (Cth) s 21 (Austl.).

87. *Clean Energy Act 2011* (Cth) s 94 (Austl.). The first auction of units for the 2015–2016 year was scheduled to take place in the first half of 2014. *See (LEPID) for 2012–13 Year, supra* note 58.

Registry of Emissions Units,[88] and enforcing compliance with the carbon pricing mechanism.[89]

Another key element of the institutional infrastructure of the carbon-pricing mechanism is the Climate Change Authority.[90] This body, which was largely modeled on the Climate Change Committee operating under climate legislation in the United Kingdom,[91] is an independent expert advisory body chaired by a former head of the Reserve Bank in Australia.[92] The Climate Change Authority is charged with responsibility for conducting a range of reviews, including reviewing and making recommendations to the government about the annual scheme caps, which are to be set on a five-year rolling basis.[93] The Authority also has a broader remit to review other complementary climate change measures, such as the RET and CFI, to ensure a coordinated and coherent approach to Australia's climate change policy.[94] The Authority recently completed a review of the RET,[95] and has produced a draft report reviewing Australia's emissions caps.[96] The latter draft report recommends increasing the ambition of the 2020 emissions reduction target to cut Australia's emissions by 15%

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88. *Australian National Registry of Emissions Units Act 2011* (Cth) pt 2 (Austl.).

89. *See* Carbon Pricing Mechanism, *Establishing a System for Auctioning Carbon Units*, AUSTL. GOV'T CLEAN ENERGY REGULATOR (Oct. 3, 2013, 4:33 PM), http://www.cleanenergyregulator.gov.au/Carbon-pricing-Mechanism/About-the-Mechanism/auctioning-carbon-units/Pages/default.aspx. Press statements made by the Regulator's Chair soon after the carbon pricing mechanism came into effect indicated that she was prepared to take a strong stance on compliance issues. David Wroe, *Carbon Cop to Pull out All Stops*, THE AGE (July 2, 2012), http://www.theage.com.au/opinion/political-news/carbon-cop-to-pull-out-all-stops-20120701-21b58.html.

90. *See Climate Change Authority Act 2011* (Cth) (Austl.).

91. *See* Climate Change Act, 2008, c. 27, § 32, sch. 1 (Eng.).

92. *Authority Members*, CLIMATE CHANGE AUTHORITY, http://climatechangeauthority.gov.au/board (last visited Oct. 16, 2013). The membership of the Authority is governed by sections 17–18 of the Climate Change Authority Act. *Climate Change Authority Act 2011* (Cth) ss 17–18 (Austl.). There is a requirement for Australia's Chief Scientist to be a member of the board. *Id.* at s 17.

93. *See Clean Energy Act 2011* (Cth) s 289 (Austl.).

94. *See id.* at s 11.

95. *See* CLIMATE CHANGE AUTH., RENEWABLE ENERGY TARGET REVIEW—FINAL REPORT (2012), *available at* http://climatechangeauthority.gov.au/ret.

96. *See Caps and Targets Review*, CLIMATE CHANGE AUTHORITY, http://climatechangeauthority.gov.au/caps (last visited Oct. 11, 2013).

to 25% from 2000 levels with a 2030 trajectory range of between 35% and 50%.[97] The Authority's recommendations for deeper cuts are based on the need to keep pace with action by other countries and its conclusion that a 5% target is inconsistent with Australia's contribution to the long term global goal of limiting warming to below two degrees Celsius.[98]

The Climate Change Authority has injected an important element of transparency into an otherwise fairly closed, market-oriented process for emissions reduction. The body's reviews must be released to the public for comment and consultation.[99] In addition, the Authority is required under its constituting legislation to have regard to a number of principles in undertaking reviews and making recommendations.[100] These include that climate change measures are "economically efficient . . . environmentally effective . . . equitable . . . in the public interest" and "support the development of an effective global response to the problem."[101] In formulating a recommendation that the Australian government should take particular action, the Climate Change Authority must also "analyze the costs and benefits of that action," although this direction does not prevent the Authority from taking account of other matters as it sees fit.[102]

For each review, the Climate Change Authority must produce a reasoned report which is published on the Authority's website and tabled in both houses of the federal Parliament.[103] The government is required to formulate a response to the Authority's recommendations, which must also be tabled in Parliament.[104] While the government is free to

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97. *See id.*; CLIMATE CHANGE AUTH., *supra* note 20, at 117. While the Climate Change Authority continues to exist until its authority is removed by federal legislation, it is unlikely that the Abbott government will accept its recommendations regarding a more ambitious 2020 emissions reduction target. *See* Rosemary Lyster, *Repealing the Carbon Tax: Hidden Costs and Unanswered Questions*, RENEW ECON. (Oct. 17, 2013), http://reneweconomy.com.au/2013/repealing-the-carbon-tax-hidden-costs-and-unanswered-questions-73657.

98. *See* CLIMATE CHANGE AUTH., *supra* note 20, at 118–19.

99. *Clean Energy Act 2011* (Cth) ss 288(6), 289(7), 290(6), 291(6) (Austl.).

100. *Climate Change Authority Act 2011* (Cth) s 12 (Austl.).

101. *Id.*

102. *Clean Energy Act 2011* (Cth) s 292(4)–(5) (Austl.).

103. *Id.* at s 292(1)–(2).

104. *Id.* at s 292(7).

ignore the Authority's recommendations, these provisions nonetheless "provide some measure of transparency" to decision-making on issues such as setting of the scheme cap, as well as assurance that government decisions "will reflect sound policy."[105]

C. PROMISING DEVELOPMENTS

The Australian carbon pricing mechanism has been in operation for over a year, and there are some tentative signs that it has had a positive impact on the energy sector and Australia's domestic emissions.[106] One of the underlying rationales of the mechanism was that putting a price on carbon would lead to a decline in high-carbon energy use, such as coal-fired power, as this becomes more expensive relative to cleaner energy sources (natural gas and renewables).[107] There is some early data indicating a decline in coal use for energy production, although it is difficult to determine the extent to which this is attributable to introduction of the carbon pricing mechanism as opposed to non-carbon price-related policies and electricity cost increases.[108]

For instance, in November 2012, the national electricity market regulator—the Australian Energy Market Operator (AEMO)—released a report on the impact of the carbon price on wholesale electricity and gas markets on the Australian eastern coast over the first few months of operation of the

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105. ZAHAR ET AL., *supra* note 8, at 193.

106. Jenny Riesz & Roger Dargaville, *Is Carbon Pricing Reducing Emissions?*, THE CONVERSATION (July 1, 2013, 7:06 AM), http://theconversation.com/is-carbon pricing-reducing-emissions-15562. The Australian Energy Market Operator (AEMO) forecast that electricity demand across the National Electricity Market for 2013–2014 will be 2.4% lower than its previous 2012 forecast. AUSTL. ENERGY MKT. OPERATOR, 2013 NATIONAL ELECTRICITY FORECASTING REPORT, at iii (2013), *available at* http://www.aemo.com.au/Electricity/Planning/Forecasting/National-Electricity-Forecasting-Report-2013.

107. *See* Riesz & Dargaville, *supra* note 106.

108. *See id.*; David Mark, *Energy Demand Forecasts Fall*, ABC NEWS PM, (June 28, 2013, 6:45 PM), http://www.abc.net.au/pm/content/2013/s3792200.htm. The AEMO has also cautioned about extrapolating results from a short time period. AUSTL. ENERGY MKT. OPERATOR, CARBON PRICE—MARKET REVIEW 3 (2012), *available at* http://www.aemo.com.au/Electricity/Resources/Reports-and-Documents/Carbon-Price-Market-Review.

scheme.[109] The AEMO reported that hydro generation increased its market share by nearly two percent over this period (8.4% to 10.2%), whereas coal-fired generation's share decreased (black coal down from 53% to 51.1% and brown coal from 24.1% to 23.3%).[110] In addition, the carbon dioxide equivalent intensity index—which measures average tons of CO_2-eq per megawatt hour of generation—also decreased over the same period by 7.6%.[111] Former Climate Change Minister Greg Combet was quick to seize on these figures, together with the closure or phasing-down of around 3000 megawatts (MW) of high-polluting electricity generation capacity, as evidence of the effectiveness of the carbon pricing mechanism.[112] "The carbon price is a key driver of these changes," he stated, although acknowledging "it is not the only factor at work."[113]

There are also emerging examples of clean energy technological innovation that appear to be tied to introduction of the carbon price. One example is the approval of a CFI methodology for manure management at piggeries.[114] The methodology allows the generation of credits from the capture of methane—a potent GHG—from swine waste ponds. Farmers can then flare the captured methane to produce less greenhouse-potent CO_2 or go further and use the methane to provide on-farm energy to run equipment and heating.[115] CFI

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109. AUSTL. ENERGY MKT. OPERATOR, CARBON PRICE–MARKET REVIEW (2012), *available at* http://www.aemo.com.au/Electricity/Resources/Reports-and-Documents/Carbon-Price-Market-Review.

110. *Id.* at 3.

111. *Id.*

112. Lenore Taylor, *Carbon Tax Contributes to Emissions Drop*, SYDNEY MORNING HERALD, Oct. 18, 2012, http://www.smh.com.au/data-point/carbon-tax-contributes-to-emissions-drop-20121017-27rl6.html.

113. *Id.*

114. *See, e.g.*, *Australia: First Piggery to Earn Carbon Credit*, PIG PROGRESS (Oct. 26, 2012), http://www.pigprogress.net/Growing-Finishing/Environment/2012/10/Australia-First-piggery-to-earn-carbon-credits-1093348W/. There are two methodologies approved for destruction of methane generated from manure in piggeries. *See* YVETTE D'ATH, CTH AUSTL., CARBON CREDITS (CARBON FARMING INITIATIVE) (DESTRUCTION OF METHANE GENERATED FROM MANURE IN PIGGERIES-1.1) METHODOLOGY DETERMINATION (2013); MARK DREYFUS, CTH AUSTL., CARBON FARMING (DESTRUCTION OF METHANE GENERATED FROM MANURE IN PIGGERIES) METHODOLOGY DETERMINATION (2012).

115. *See* CTH AUSTL., CFI METHODOLOGY: DESTRUCTION OF METHANE FROM MANURE IN PIGGERIES—FACT SHEET 1 (2013). Farmers may also be eligible to generate renewable energy certificates for use under the Renewable

credits earned from methane capture can be sold to liable entities under the carbon pricing mechanism for compliance purposes, a market opportunity that would not exist in the absence of the carbon price.[116]

Another development, also much trumpeted by the former Gillard government, was the conclusion of an agreement in August 2012 with the European Commission to link the carbon pricing mechanism to the EU ETS from 2015.[117] This linkage, if it had come to fruition, would have created the world's largest carbon trading market, with arguably much greater potential to drive a clean energy transformation in the participating jurisdictions.[118] Legislation enacted by the federal parliament prior to the election provided for an initial one-way link, with Australian liable entities able to use European Unit Allowances (EUAs) to discharge liabilities under the carbon pricing scheme from July 1, 2015.[119] The Gillard government and the European Commission had intended to conclude a formal agreement on a full two-way link by mid-2015, to commence no later than July 1, 2018.[120] The Gillard government was also reported to be pursuing linkages with other ETS around the world.[121] Potential candidates included the Californian cap-

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Energy Target, a scheme that will continue under the Abbott government, subject to review in 2014. *Id.*

116. *See Pig Farming and Making Money from Carbon Credits*, PIGS WILL FLY (Nov. 11, 2011), http://www.pigswillfly.com.au/2011/11/pig-farming-and-making-money-from-carbon-credits/.

117. *See* Press Release, European Comm'n & Greg Combet, Minister for Climate Change & Energy Efficiency, Australia and European Commission Agree on Pathway Towards Fully Linking Emissions Trading Systems (Aug. 28, 2012), *available at* http://www.climatechange.gov.au/ministers/hon-greg-combet-am-mp/media-release/australia-and-european-commission-agree-pathway.

118. *Id.*

119. *See Australian National Registry of Emissions Units Act 2011* (Cth) s 4 (Austl.), *amended by Clean Energy Amendment (International Emissions Trading and Other Measures) Act 2012* (Cth) s 4 (Austl.). The Gillard government also issued implementing regulations to facilitate the transfer and recognition of EUAs in the Australian registry. *Clean Energy Regulations 2011* (Cth) r 6.1A (Austl.).

120. European Comm'n & Combet, *supra* note 117.

121. *See, e.g.*, ALEXANDER KOSSOY ET AL., WORLD BANK, MAPPING CARBON PRICING INITIATIVES: DEVELOPMENTS AND PROSPECTS 64, 66–71, 71–72 (2013); Brad Jessup & Katherine Lake, *Let's Link Up: Joining Our Carbon Price to California's*, THE CONVERSATION (Jan. 23, 2013, 2:32 PM), https://theconversation.com/lets-link-up-joining-our-carbon-price-to-californias-11701.

and-trade scheme,[122] the voluntary ETS operating in Japan,[123] South Korea, which recently passed legislation to establish a carbon trading scheme starting in 2015,[124] and China, which has a number of pilot schemes in operation in different provinces.[125]

It is difficult to predict how linkage of the Australian scheme with the EU ETS might have affected the effectiveness of the former. Businesses with liabilities under the Australian scheme largely welcomed the linkage decision as it opened up opportunities to purchase and bank EUAs—currently selling at record lows—for future use in the Australian scheme.[126] On the other hand, the linkage decision would have meant that the price of Australian carbon units during the ETS phase of the scheme was heavily influenced by the price of EUAs and developments in regulation of the EU ETS.[127] In addition, as part of the linkage agreement, previous price safeguards included in the Australian scheme—a price floor and a surrender charge placed on international units—were removed.[128] The unhappy history of the EU ETS carbon price added to uncertainty over the impact of linkage on the Australian carbon price.[129]

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122. *See* Jessup & Lake, *supra* note 121.

123. *See* KOSSOY ET AL., *supra* note 121, at 64.

124. *See id.* at 71–72.

125. *See id.* at 66–71.

126. *See* Kristy Campbell et al., *Carbon Price Update: Linking the Australian and EU Schemes*, FREEHILLS (Aug. 30, 2012), http://www.herbertsmithfreehills.com/-/media/Freehills/A300812%2023%2032.PDF; Sue Davidson & Chris Norlen-Holmes, *Linking the Australian and EU Carbon Markets—An Overview of How, When and What This Means for Business*, CORRS CHAMBERS WESTGARTH (Apr. 16, 2013), http://www.corrs.com.au/thinking/insights/linking-the-australian-and-eu-carbon-markets-an-overview-of-how-when-and-what-this-means-for-business.

127. *See* DEP'T OF CLIMATE CHANGE & ENERGY EFFICIENCY, CTH AUSTL., REGULATORY IMPACT STATEMENT ON INTERIM PARTIAL (ONE-WAY) LINK BETWEEN THE AUSTRALIAN EMISSIONS TRADING SCHEME (ETS) AND THE EUROPEAN UNION EMISSIONS TRADING SYSTEM (EU ETS) 3, 6 (2012); CLIMATE CHANGE AUTHORITY, RENEWABLE ENERGY TARGET REVIEW—FINAL REPORT 27 (2012).

128. *See* European Comm'n & Combet, *supra* note 117.

129. *See, e.g.*, Edwin Woerdman, Stefano Clo & Alessandra Arcuri, *European Emissions Trading and the Polluter-Pays Principle: Assessing Grandfathering and Over-Allocation*, *in* CLIMATE CHANGE AND EUROPEAN EMISSIONS TRADING: LESSONS FOR THEORY AND PRACTICE 128, 128–29 (Michael Faure & Marjan Peeters eds., 2008); Jon Birger Skjaerseth, *EU Emissions Trading: Legitimacy and Stringency*, 20 ENVTL. POL'Y &

III. LESSONS FROM THE AUSTRALIAN CARBON PRICING EXPERIENCE

At the international level, the shape of any global climate change agreement and associated emissions reduction commitments that might emerge from the current round of negotiations under the so-called Durban platform remains unclear.[130] "In this setting, the 'global carbon market'" for the time being is likely to "consist of a number of individual domestic, regional and voluntary ETS, each covered by its own specific legislation and governance arrangements."[131] Despite the emerging regulatory patchwork for GHG abatement, a study of individual schemes offers considerable potential for deriving lessons for the development of similar schemes in other jurisdictions. The Australian carbon pricing mechanism itself was designed with close attention paid to the lessons from the EU ETS and the experience of other jurisdictions engaged in ETS regulation, such as California.[132] This Part considers a number of key lessons from the Australian scheme for other

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GOVERNANCE 295, 295–96 (2010); *ETS, RIP?*, THE ECONOMIST, Apr. 20, 2013, at 75. A Commission "backloading" proposal designed to reduce available allowances and thereby shore up the price of EUAs was approved on a second vote of the European Parliament. *See Connie Hedegaard: "Parliament Vote Sends a Clear Message that Europe Needs an Effective ETS"*, EUR. COMM'N (July 3, 2013), http://ec.europa.eu/commission_2010-2014/hedegaard/headlines/news/2013-07-03_02_en.htm; Press Release, Point Carbon, Back Loading Given Green Light From Parliament (July 3, 2013), *available at* http://www.pointcarbon.com/aboutus/pressroom/pressreleases/1.2445845.

130. Marissa Knodel & Omar Malik, Setting the Stage for Climate Negotiations, YALE SCH. FORESTRY & ENVTL. STUD. BLOG (Nov. 20, 2012), http://environment.yale.edu/blog/2012/11/setting-the-stage-for-climate-negotiations/; *see* Rep. on the Conf. of the Parties on its 17th Sess., U.N. Framework Convention on Climate Change, Nov. 28–Dec. 11, 2011, U.N. Doc. FCCC/CP/2011/9/Add.1 (Mar. 15, 2012), *available at* http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf. The Durban Platform is an agreement by UNFCCC parties to launch new negotiations for a universal climate change agreement, encompassing the United States as well as major developing country emitters. *Summary of the Doha Climate Change Conference*, EARTH NEGOTIATIONS BULL. (Dec. 11, 2012), http://www.iisd.ca/vol12/enb12567e.html. Negotiations are due to conclude in 2015 with the agreement to come into effect by 2020. U.N. Framework Convention on Climate Change, *supra* note 130, at 2.

131. ZAHAR ET AL., *supra* note 8, at 177.

132. *See, e.g.*, AUSTL. GOV'T PRODUCTIVITY COMM'N, CARBON PRICING POLICIES IN KEY ECONOMIES: PRODUCTIVITY COMM'N RESEARCH REPORT 88–89 (2011), *available at* http://www.pc.gov.au/__data/assets/pdf_file/0003/109830/carbon-prices.pdf.; GARNAUT, UPDATE PAPER SIX, *supra* note 54, at 19.

jurisdictions, such as the United States, seeking to develop legal and policy reforms to drive the uptake of clean energy sources.

A. THE PRICE MUST BE RIGHT

Carbon pricing is a market measure designed to incentivize the transition away from high-carbon energy sources by pricing the environmental externality created by the emission of GHGs.[133] By putting a price on emitting greenhouse pollutants, the aim is to make the use of GHG-intensive energy sources more expensive and thereby encourage transition to cleaner energy sources, as well as the development of technologies designed to reduce emissions.[134] During the fixed-price phase of Australia's hybrid carbon pricing mechanism, the starting carbon price for the 2012–13 financial year was twenty-three AUD (roughly twenty USD) per ton of CO_2-eq emitted.[135] While one can imagine U.S. politicians recoiling at the thought of a twenty dollar per ton carbon tax, from an economic point of view, the level of the Australian carbon price was considered, by some analysts, too low to drive a significant transition away from fossil fuels in the energy sector.[136] Price modeling undertaken by Deloitte prior to introduction of the scheme suggested the carbon price would need to be "well above" thirty AUD to bring about a significant reduction in coal use for energy production in Australia.[137] In his 2011 Report, Professor Garnaut recommended Australia's initial carbon

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133. *See, e.g.*, Ben Spraggon & Mathew Liddy, *Carbon Pricing Explained*, AUSTL. BROAD. CORP. (ABC) NEWS, http://www.abc.net.au/news/specials/climate-change/pricing-explained/ (last visited Oct. 18, 2013).

134. *See* KARSTEN NEUHOFF, CLIMATE POLICY AFTER COPENHAGEN: THE ROLE OF CARBON PRICING 19–20 (Cambridge Univ. Press 2011).

135. Evgeny Guglyuvatyy, *Australia's Carbon Policy: A Retreat from Core Principles*, 10 EJOURNAL TAX RES. 552, 562 (2012), *available at* http://www.asb.unsw.edu.au/research/publications/ejournaloftaxresearch/Documents/full_edition_v10n3.pdf. On July 1, 2013, the carbon price increased to 24.15 AUD per ton. It will increase again to 25.40 AUD on July 1, 2014, providing the legislation establishing the carbon pricing mechanism is not repealed in the interim. *Id.*

136. DELOITTE TOUCHE TOHMATSU, ELECTRICITY GENERATION INVESTMENT ANALYSIS, FINAL REPORT 37 (2011), *available at* http://www.ret.gov.au/energy/Documents/Energy-Security/Deloitte-Draft-Report-on-Electricity-Investment-01.pdf.

137. *Id.*

price be in the range of twenty to thirty AUD.[138] Negotiations in the Multi-Party Climate Change Committee resulted in a political compromise at the lower end of this range: a starting carbon price of twenty-three AUD per ton of CO_2-eq.[139]

In the full ETS phase with a "flexible" carbon price, expectations were that the carbon price would decrease rather than increase, at least in the short-term.[140] Indeed, it is an inherent feature of ETS that the carbon price fluctuates in response to changes in demand and supply of emissions allowances.[141] Linkage with the EU ETS was likely to exacerbate price variability, as the Australian carbon price would have been influenced to a significant extent by the price of EUAs, which have been depressed in recent years due to problems of oversupply.[142] With the scheme's previous price floor of fifteen AUD per ton of CO_2-eq also removed, there was no limitation to prevent the Australian carbon price falling to very low levels.[143]

The primary drawback of a "low" carbon price is that it may result only in a transition to "cleaner" energy sources, i.e., from coal to natural gas, without driving large-scale deployment of clean energy technologies to harness renewable energy sources.[144] Lack of certainty as to the carbon price

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138. GARNAUT, UPDATE PAPER SIX, *supra* note 54, at 10.

139. CTH AUSTL., MPCCC CLEAN ENERGY AGREEMENT 1 (2011), *available at* http://www.climatechange.gov.au/climate-change/multi-party-climate-change-committee/resources/multi-party-climate-change-committee-clean-energy-agreement.

140. CTH AUSTL., BUDGET OVERVIEW 28 (2013), *available at* http://www.budget.gov.au/2013-14/content/overview/html/index.htm; *see Treasurer Chris Bowen Confirms Government Will Scrap Carbon Tax for Floating Price*, AUSTL. BROAD. CORP. (ABC) NEWS (July 15, 2013, 9:25 AM), http://www.abc.net.au/news/2013-07-14/federal-government-to-scrap-carbon-tax/4818980 (reporting that Former Treasurer Chris Bowen acknowledged that if the scheme was amended to move to the flexible price period a year earlier this would come at a budget cost of several million dollars; this estimate was based on the carbon price dropping from 24.15 AUD (fixed price for 2013–14) to a floating price expected to be between 6–10 AUD per ton).

141. GARNAUT (2008), *supra* note 27, at 344.

142. These problems may be mitigated by the Commission's backloading initiative. *See supra* note 129 and accompanying text.

143. Frank Jotzo et al., *Policy Uncertainty About Australia's Carbon Price: Expert Survey Results and Implications for Investment*, 45 AUSTL. ECON. REV. 395, 399 (2012).

144. *Id.* at 399–400; *see also* Ben Elliston et al., *Least Cost 100% Renewable Electricity Scenarios in the Australian National Electricity Market*, 59 ENERGY

under an ETS, coupled with the problem that the price may fall to negligible levels if there is an oversupply of carbon units in the scheme, might be seen by some as a reason for preferring a carbon tax over an ETS.

B. POLLUTER PAYS, NOT PAY THE POLLUTERS

One of the salutary lessons of the EU ETS has been the danger of oversupplying the carbon market with emissions allowances.[145] An oversupply of allowances both depresses the carbon price in the market and also inflates the cap, lessening the environmental effectiveness of the scheme. A simple way to avoid this problem is to allocate all emissions allowances by way of auction.[146] However, full auctioning of allowances is often considered politically unpalatable due to industry resistance, coupled with the potential for cost-of-living increases as the costs to businesses of purchasing allowances are passed through to consumers.[147] Where the introduction of a carbon price may affect the economic viability of a substantial portion of electricity generators (coal-fired), full auctioning of permits may also raise energy security concerns.[148] A common aspect of ETS design has therefore been the provision of free permits to some industry sectors to shield them—at least on a transitional basis—from the full financial impact of carbon pricing.[149] Australia's carbon pricing mechanism followed this trend, including substantial provisions for the allocation of free emissions permits and other compensation payments to existing sources with high emissions.[150] Two categories of emitters receive assistance under the scheme: entities engaged in emissions-intensive, trade-exposed (EITE) activities and electricity generators emitting high levels of carbon pollution.[151]

POL'Y 270, 280–81 (2013); *Natural Gas-Fired Generation to Fall Two Thirds Without Carbon*, REPUTEX *(*Mar. 5, 2013), *available at* http://www.reputex.com/publications/gasgentofall/ (subscription required).

145. Woerdman, Clo & Arcuri, *supra* note 129, at 141–42.

146. GARNAUT (2008), *supra* note 27, at 331–32.

147. *Id.* at 332–33.

148. Explanatory Memorandum, Clean Energy Bill 2011 (Cth) paras 6.189–6.197 (Austl.).

149. GARNAUT (2008), *supra* note 27, at 332.

150. Explanatory Memorandum, *supra* note 148, at paras. 6.1–6.8.

151. *Clean Energy Act 2011* (Cth) pts 7–8 (Austl.).

As Professor Garnaut articulated in his 2008 Report, there is a reasonable economic case that can be made for assistance to EITE industries operating in a global context where there is no harmonized carbon pricing regime.[152] The lack of a globally applicable carbon price can create an economic disadvantage for such industries vis-à-vis their competitors and can potentially result in "carbon leakage."[153] Border adjustment measures levying an equivalent carbon price on imported goods,[154] or extraterritorial operation of a jurisdiction's carbon pricing requirements,[155] might also be used to achieve a level playing field between domestic export-oriented industries and competitors operating in jurisdictions without a carbon price. However, both options present significant problems under international trade law.[156] The Australian carbon pricing scheme adopted a more straightforward approach for providing assistance to EITE activities by establishing a system of free permit allocation known as the "Jobs and Competitiveness

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152. GARNAUT (2008), *supra* note 27, at 344–49.

153. *Id.* at 230; JOHN DALEY & TRISTAN EDIS, GRATTAN INST., RESTRUCTURING THE AUSTRALIAN ECONOMY TO EMIT LESS CARBON: MAIN REPORT (2010); MICHAEL GRUBB & THOMAS COUNSELL, CARBON TRUST, TACKLING CARBON LEAKAGE: SECTOR-SPECIFIC SOLUTIONS FOR A WORLD OF UNEQUAL CARBON PRICES 1 (2010), *available at* http://www.carbontrust.com/media/84908/ctc767-tackling-carbon-leakage.pdf; GARNAUT, UPDATE PAPER SIX, *supra* note 54, at 46–49.

154. U.N. ENV'T PROGRAMME, *supra* note 25, at 74–77; Roland Ismer & Karsten Neuhoff, *Border Tax Adjustment: A Feasible Way to Support Stringent Emission Trading*, 24 EUR. J.L. & ECON. 137 (2007).

155. For example, the EU's aviation rules requiring flights to and from the EU to acquit emissions allowances for emissions associated with the flight. These rules were upheld by the European Court of Justice but continue to be a source of trade concerns. *See* Case C-366/10, Air Transp. Ass'n of Am. v. Sec'y of State for Energy & Climate Change, 2011 E.C.R. I-13833, *available at* http://curia.europa.eu/juris/celex.jsf?celex=62010CJ0366&lang1=en&type=NOT&ancre=.

156. In a domestic context they also raise dormant Commerce Clause issues. In terms of problems presented under international trade law, imposition of a carbon impost on imported goods or a requirement to purchase domestic emissions permits to cover embedded emissions in imported products may fall foul of national treatment rules under Article III of the World Trade Organization's General Agreement on Tariffs and Trade. *See* General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194; UNITED NATIONS ENV'T PROGRAMME & WORLD TRADE ORG., TRADE AND CLIMATE CHANGE: WTO-UNEP REPORT 87–110 (2009), *available at* http://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf.

Program."[157] Some activities with very high carbon costs and limited price pass-through capacity (e.g., aluminum smelting) receive very high levels of assistance, whereas other "moderately" emissions-intensive industries receive lower levels of assistance.[158] The EITE assistance is intended to taper off over time to encourage pollution reduction by the industries concerned, and is subject to review by the independent Productivity Commission.[159]

The rationale for providing assistance to existing coal-fired electricity generators is more dubious and has been sharply criticized by environmental groups as an instance of "pay the polluters."[160] Professor Garnaut also came out strongly against inclusion of an assistance package for coal-fired electricity generators in the clean energy legislation.[161] Under the package, generators receive two forms of assistance with a combined estimated value of 5.5 billion AUD over six years until 2017.[162] One-off cash payments totaling one billion AUD were made to nine coal-fired generators—including some of Australia's dirtiest power stations—in June 2012.[163] Additionally, as part of the "Energy Security Fund," coal-fired generators are due to receive 41.705 million free carbon units over a five-year period (2013–2017).[164] A third element of the

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157. Explanatory Memorandum, Clean Energy Bill 2011 (Cth) paras 5.32–5.54 (Austl.).

158. *Id.* at paras 5.15–5.18. Entities assessed as conducting highly emissions intensive, trade exposed activities received 94.5% of their units for free in the first year and those conducting moderately intensive activities, 66% of their units. The rate of assistance was to decrease by 1.3% per year. *Id.*

159. *Clean Energy Act 2011* (Cth) pt 7, div 5 (Austl.).

160. *See* Tony Mohr, *Should We Spend $5.5 Billion on Solutions or Pollution*?, AUSTL. CONSERV. FOUND. (Oct. 15, 2012), http://www.acfonline.org.au/news-media/blog/should-we-spend-55-billion-solutions-or-pollution; *Windfall Profits to Australia's Dirtiest Power Stations*, ENV'T VICTORIA, http://environmentvictoria.org.au/windfallprofits (last visited Oct. 7, 2013).

161. GARNAUT (2008), *supra* note 27, at 344–45; *see* Giles Parkinson, *Garnaut Calls the Generators' Bluff*, CLIMATE SPECTATOR (Mar. 30, 2011, 6:49 AM), http://www.businessspectator.com.au/article/2011/3/30/policy-politics/garnaut-calls-generators-bluff.

162. COMBET, *supra* note 2, at 32.

163. *Generation Complexes Eligible to Receive Energy Security Fund Cash Payments*, DEP'T CLIMATE CHANGE & ENERGY EFFICIENCY, CTH AUSTL., http://archive.is/f0iXw (last updated July 9, 2012).

164. *Coal-Fired Generator Assistance*, CTH AUSTL., CLEAN ENERGY REGULATOR, http://www.cleanenergyregulator.gov.au/Carbon-pricing-

package, known as the "Contract for Closure Program," was designed to buy out 2000 MW of the most highly-polluting power generation in Australia.[165] However, this program was abandoned by the Gillard government in September 2012 due to the enormity of compensation being sought by generators under the scheme.[166]

The allocation of free permits and other assistance to coal-fired generators under the scheme creates the potential for windfall gains if carbon price increases are still passed through to electricity consumers. The Energy Security Fund places very light requirements on generators in order to qualify for assistance, and this assistance is not subject to review.[167] Moreover, as Christensen, Duncan, and Phillips note, the legislative formula for the allocation of free carbon units may create perverse incentives for existing generators to keep operating at full capacity in order to receive the free units.[168] Overall, the assistance program for coal-fired generators exemplifies the tension between competing objectives of fostering a clean energy transition—based on the principle of "polluter pays"[169]—and energy security concerns, which may lead to paying polluters in the energy-generation sector to continue to pollute.

C. THE POLITICS MUST (IDEALLY) BE SUPPORTIVE

As the debates over industry assistance in Australia reveal, carbon pricing is a politically sensitive area subject to many competing interests.[170] Indeed, carbon and climate change policy has been a divisive political issue in many

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Mechanism/Industry-Assistance/coal-fired-generators/Pages/default.aspx (last updated Sept. 2, 2013); *Clean Energy Act 2011* (Cth) pt 8 (Austl.).

165. *Contract for Closure*, DEP'T OF RES., ENERGY & TOURISM, CTH AUSTL., http://www.ret.gov.au/energy/clean/contract/Pages/ContractforClosure.aspx (last updated Sept. 25, 2012).

166. *Id.*

167. *See Clean Energy Act 2011* (Cth) ss 177–180 (Austl.); Caripis et al., *supra* note 49, at 601.

168. Sharon Christensen et al., *Regulation of Emissions Under the Carbon Pricing Mechanism: A Case Study of Australia's Coal-Fired Electricity Sector*, 15 ASIA PAC. J. ENVTL. L. 17, 23 (2012).

169. *See* PHILIPPE SANDS & JACQUELINE PEEL, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 228–29 (3d ed. 2012) (stating that the polluter pays principle indicates that the costs of pollution should be borne by the person or entity responsible for causing pollution).

170. Christensen et. al., *supra* note 168, at 1.

countries, including the United States.[171] Efforts to transform fossil fuel economies to low-carbon economies often encounter strong resistance from entrenched fossil fuel industry interests and other lobby groups.[172] Consequently, GHG emissions reduction schemes such as ETS have rarely been able to be established and maintained without bipartisan political support.[173] The Australian experience unfortunately bears out this political truism.

The path to introducing a carbon pricing mechanism in Australia was a politically perilous one. Dubbed the "killing fields" of Australian politics,[174] failed carbon pricing policies have seen the fall of Australia's three most recent prime ministers (John Howard, Julia Gillard, and Kevin Rudd)[175] and one leader of the Opposition party (Malcolm Turnbull).[176] The former Prime Minister Gillard, whose government was responsible for passage of the clean energy legislation establishing the carbon pricing mechanism, became deeply unpopular in the electorate, in part because of the "broken" pre-election promise not to introduce a carbon tax.[177] Dire polling for the Gillard government in the lead-up to the September 2013 federal election resulted in an internal party vote in June to reinstate Kevin Rudd as the new (old) leader of the party.[178] This change did not save the Rudd/Gillard

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171. *See* Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1155, 1180 (2009); Aileen McHarg, *Climate Change Constitutionalism? Lessons from the United Kingdom*, 2 CLIMATE L. 469, 471 (2011).

172. McHarg, *supra* note 171, at 470.

173. *Id*. at 472, 476.

174. James West, *How the Carbon Tax Became the 'Killing Fields' of Australian Politics*, THE GUARDIAN (Sept. 6, 2013, 4:00 PM), http://www.theguardian.com/environment/2013/sep/06/election-2013-carbon-price-australian-politics.

175. Prime Minister Howard lost the federal election to Kevin Rudd in 2007. *Id.* His loss was attributed in part to the inertia of his government in introducing climate change policies such as an ETS. *Id.* Kevin Rudd's own failure to introduce an ETS and the public backlash as a result saw his downfall and the installation of Julia Gillard. Gillard's 'broken promise' not to introduce a carbon tax led to unpopularity in the polls and her brief replacement with a revived Kevin Rudd, who was defeated by Tony Abbott in the September 2013 federal election. *Id.*

176. *Id.*

177. *Id.*

178. Before the election, Prime Minister Rudd indicated he supported the carbon pricing mechanism although he promised to bring forward the floating

government, which was soundly defeated at the election by the conservative Coalition party led by Tony Abbott.[179] The new prime minister has made his government's "first order of business" the repeal of the clean energy legislation and dismantling of the supporting institutional infrastructure.[180] Already the Abbott government has disbanded the independent Climate Change Commission and ordered the Clean Energy Finance Corporation—which provides co-financing for renewable energy projects—to cease making loans.[181] Legislation to repeal the carbon price and disband institutions such as the Climate Change Authority is currently before, and will need to be passed by, the federal parliament.[182] This may take some time, given the make-up of the Senate until July 1, 2014, when the newly-elected senators take their seats. Even so, the future of the clean energy legislation looks grim: "Australia's carbon pricing mechanism might enter history as one of the best-designed yet shortest-lived policies for climate change mitigation."[183]

Anticipating political opposition to the scheme and future attempts to repeal the underpinning legal framework, the Gillard government included in the clean energy legislation a number of features designed to embed the scheme in Australian federal law. While these features are not likely to be sufficient to withstand determined efforts by the Abbott government to repeal the legislation, they have what Aileen McHarg has termed, "constitutionalist" elements that may serve to counteract short-term political and economic

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price period of the scheme by one year (to July 1, 2014). *See* Spraggon & Liddy, *supra* note 133.

179. West, *supra* note 174.

180. *See* Clarke & Greene, *supra* note 19.

181. *See* Tom Arup, *Abbott Shuts Down Climate Commission*, THE AGE (Sept. 19, 2013), http://www.theage.com.au/federal-politics/political-news/abbott-shuts-down-climate-commission-20130919-2u185.html; Lenore Taylor, *Clean Energy Finance Corporation Could Sue over Coalition Shutdown*, THE GUARDIAN (Sept. 18, 2013, 10:08 PM), http://www.theguardian.com/world/2013/sep/19/clean-energy-finance-corp-could-sue.

182. The principal repeal legislation is the Clean Energy Legislation (Carbon Tax Repeal) Bill 2013 (Cth) (Austl.) and the Climate Change Authority (Abolition) Bill 2013 (Cth) (Austl.).

183. Jotzo, *supra* note 56, at 476.

imperatives designed to reduce the ambition of mitigation actions.[184]

One example of such a feature is the designation of carbon units under the scheme as "personal property."[185] This goes against the trend in ETS, which have tended to create emissions permits as something less than property in order to avoid possible takings issues if permits are later revoked.[186] The decision to make carbon units a form of property seems to have been taken with an eye to making dissolution of the scheme and revocation of units a more politically difficult, and potentially expensive, option for later governments.[187] In a similar way, revenue generated by the scheme has been used to fund a range of beneficial income tax changes and household-assistance payments for low-income earners likely to be particularly impacted by cost-of-living changes associated with

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184. McHarg, *supra* note 171, at 469; *see also* Lazarus, *supra* note 171, at 1179–84 (arguing for the necessity of embedding features in climate legislation given the long-term nature of the problem).

185. *Clean Energy Act 2011* (Cth) s 103 (Austl.).

186. *Directive 2003/87/EC of the Eur. Parliament and of the Council of 13 October 2003 Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community*, 2003 O.J. (L 275) 32, 34 art. 3 (setting up the EU ETS; an "allowance" means an allowance to emit one ton of CO_2 above the minimum level during each year); *see also* CAL. CODE REGS. tit. 17, §§ 95820–95821 (2008) (establishing the Californian cap-and-trade scheme and expressly stating that the allowances, known as compliance instruments, are a limited authorization to emit up to one metric ton of specified CO_2-eq and do not constitute property or a property right). *See generally* Susan A. Austin, *Tradable Emissions Programs: Implications Under the Takings Clause,* 26 ENVTL. L. 323 (1996) (addressing potential takings issues resulting from revocation of emissions permits).

187. *See* NORTON ROSE, THE FUTURE OF THE CARBON PRICING MECHANISM: MANAGING UNCERTAINTY 7–12 (2013). A number of legal practitioners and scholars have written about the compensation and political issues associated with repealing the scheme. *See* Fergus Green, *Abbott's Gory Pledge Would Be a Legal Bloodbath,* CRIKEY (Oct. 3, 2011, 1:04 PM), http://www.crikey.com.au/2011/10/13/abbotts-gory-pledge-would-be-a-legal-bloodbath; Andrew Macintosh, *Abbott Has Pledged to Repeal the Carbon Tax—But Could It Be Done?*, THE CONVERSATION (July 2, 2012, 6:39 AM), http://theconversation.com/abbott-has-pledged-to-repeal-the-carbon-tax-but-could-it-be-done-7986; George Williams, Opinion, *Abbott Courts Trouble with Carbon Tax Plans*, SYDNEY MORNING HERALD, Oct. 26, 2011, at 13, *available at* http://www.smh.com.au/federal-politics/political-opinion/abbott-courts-trouble-with-carbon-tax-plans-20111025-1mi0d.html. *But see Focus: Now for the Direct Action Plan*, ALLENS LINKLATERS (Sept. 9, 2013), http://www.allens.com.au/pubs/cc/focc9sep13.htm.

introduction of an economy-wide carbon price.[188] The changes made in this regard would be difficult to unwind by any incoming government seeking to repeal the associated clean energy legislation. Indeed, in his reply to the May 2013 federal budget, then Opposition Leader Tony Abbott conceded that the carbon tax compensation package would remain in place under a Coalition government, albeit that the rationale for such compensation would disappear if the carbon pricing scheme is removed.[189]

The carbon pricing mechanism also contains features that allow it to self-perpetuate, even in the advent of an unsupportive government. For example, the legislation contains default cap-setting provisions so that, if the government fails to make regulations to set a cap for the scheme, the scheme will continue on an emissions reduction trajectory towards the 2020 target of a five percent reduction from 2000 levels.[190] In the short term, continuation of the scheme without active support from the government is a real possibility. Control of the federal Senate does not presently rest with the Coalition, and even after July 1, 2014, the Abbott government will need to negotiate with a variety of minor parties and independent senators for the passage of legislation, which may result in delays in its efforts to repeal the clean energy legislation. In the meantime, independent institutions such as the Climate Change Authority and Clean Energy Regulator look set to continue their work. While this can hardly be described as an optimal way to design long-term climate change mitigation policy it may nonetheless represent a practical response in order to "restrai[n] the present to liberate the future."[191]

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188. *See* Jotzo, *supra* note 56, at 2; CTH AUSTL., *supra* note 140, at 29 (discussing revised downward forecasts of revenue from the carbon pricing mechanism, due to the availability of cheap EUAs and international offset credits, meant that the Gillard government deferred tax cuts slated for the commencement of the flexible price period).

189. Press Release, Liberal Party of Austl., Budget Reply 2013: Taking Pressure off Households (May 16, 2013), *available at* http://www.liberal.org.au/latest-news/2013/05/16/budget-reply-2013-taking-pressure-households ("A Coalition government will keep the current income tax thresholds and the current pension and benefit fortnightly rates while scrapping the carbon tax.").

190. *Clean Energy Act 2011* (Cth) ss 17–18 (Austl.).

191. Lazarus, *supra* note 184, at 1153.

D. CARBON PRICING IS NOT A PANACEA: THE NEED FOR A REGULATORY MIX

As discussed in Part II, above, a preference for market mechanisms to address emissions reduction has been a *leitmotif* of Australian climate policy development. In other environmental areas, Australia has also been an enthusiastic supporter of market measures for addressing a variety of environmental and energy issues, including water allocation and electricity generation and distribution.[192] Unlike the United States, there has consequently been no serious consideration of direct regulation as an alternative basis for Australian climate law. Attempted legislative interventions along these lines—such as mooted federal GHG emissions standards for new power generators similar to those under development by the U.S. EPA—never made it past the policy proposal stage in Australia.[193] The new Abbott government has promised to replace carbon pricing with a policy of "direct action," but this will not involve new regulatory measures.[194] Instead, the lynchpin of Direct Action is an Emissions Reduction Fund to be used to purchase emissions abatement via a "reverse auction" (i.e., bids for the lowest-cost projects will receive funding first).[195]

Against this background of a strong preference for market measures, influential voices in the development of Australia's climate policy initially advocated the view that introduction of a carbon price would remove the need for other existing clean

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192. MARTIN FERGUSON, MINISTER FOR RES., ENERGY & TOURISM, DRAFT ENERGY WHITE PAPER: STRENGTHENING THE FOUNDATIONS FOR AUSTRALIA'S ENERGY FUTURE 42, 62 (2011); *see* MARKETS, THE STATE, AND THE ENVIRONMENT: TOWARDS INTEGRATION (Robyn Eckersley ed., 1995); Rosemary Lyster, *(De)regulating the Rural Environment*, 19 ENVTL. & PLANNING L.J. 34 (2002).

193. *Cf.* FERGUSON, *supra* note 192, at 165 ("[I]n light of the passage of legislation to introduce a carbon price from 1 July 2012, The Australian Government has taken a decision not to proceed with the introduction of an emissions standard or carbon capture and storage standard for future coal-fired generation investment.").

194. *See Reduce Carbon Emissions*, LIBERAL PARTY AUSTL., http://www.liberal.org.au/our-plan/environment (last visited Oct. 8, 2012).

195. *Id.*; *see Emissions Reduction Fund*, DEP'T ENV'T, CTH AUSTL., http://www.environment.gov.au/emissions-reduction-fund/index.html (last visited Nov. 20, 2013).

energy measures at the state and federal levels.[196] As in the United States, these measures encompass a plethora of regulations directed to promoting renewable energy uptake and improving energy efficiency.[197] At the federal level, the most prominent measure is the Renewable Energy Target (RET) scheme, which aims to increase the deployment of renewable energy by twenty percent by 2020.[198] In his 2008 Report, Professor Garnaut stridently argued for phasing out the RET following the establishment of an ETS in Australia.[199] The Report stated: "No useful purpose is served by other policies that have as their rationale the reduction of emissions from sectors covered by the trading scheme."[200]

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196. INDEP. PRICING & REGULATORY TRIBUNAL, RENEWABLE ENERGY TARGET REVIEW 3–6 (2012). Other Australian jurisdictions have undertaken an assessment of their climate policies and programs for their "complementarity" with the carbon price. *See* COAG TASKFORCE, REVIEW OF CARBON REDUCTION AND ENERGY EFFICIENCY MEASURES 10 (2013), *available at* http://www.coag.gov.au/sites/default/files/BAF-Review-Carbon-Reduction-Energy-Efficiency-Measures.pdf.

197. ZAHAR ET AL., *supra* note 8, at 151–63.

198. *Renewable Energy (Electricity) Act 2000* (Cth) s 40 (Austl.) (specifying the required annual gigawatt hours (GWh) of renewable energy electricity up to a maximum of 41,000 GWh by 2020). The scheme, introduced by the Howard government in 2000, will receive its next biennial Renewable Energy Target review in 2014. *See About the Climate Change Authority*, CLIMATE CHANGE AUTHORITY, http://climatechangeauthority.gov.au/content/about-climate-change-authority (last visited Nov. 7, 2013). The Abbott government has maintained that it supports the RET but has said that the 2014 review will take account of the impact of renewable energy on electricity prices. *See* Annabel Hepworth, *RET Review to Focus on High Power Bills*, THE AUSTRALIAN, Nov. 12, 2013, http://www.theaustralian.com.au/national-affairs/policy/ret-review-to-focus-on-high-power-bills/story-e6frg6xf-1226757692465#. This could see the Abbott government review the target downwards to 20% of real electricity demand by 2020, which would equate to about 27,000 GWh of installed renewable energy capacity rather than the currently required 41,000 GWh by 2020. *Id.*

199. GARNAUT (2008), *supra* note 27, at 29; *see also* AUSTL. GOV'T PRODUCTIVITY COMM'N, WHAT ROLE FOR POLICIES TO SUPPLEMENT AN EMISSIONS TRADING SCHEME? SUBMISSION TO THE GARNAUT CLIMATE CHANGE REVIEW 29–33 (2008), *available at* http://www.pc.gov.au/__data/assets/pdf_file/0003/79716/garnaut.pdf.

200. GARNAUT (2008), *supra* note 27, at xxxii. In comparison to this theoretical perspective, Garnaut championed the role of the RET in his submission to the Climate Change Authority's review of the RET scheme. Garnaut cited the politically comprised and uncertain future of the carbon pricing mechanism, and the certainty the target provides to investors as reasons for its retention. *See* CLIMATE CHANGE AUTH., *supra* note 95, at 31.

The underlying rationale of the Garnaut approach is that an effective and sufficiently broad carbon price will allow the market full rein to direct emissions reduction efforts to the least-cost option without interference or distortion by government interventions.[201] Nonetheless this pure market approach contrasts with the practice in other jurisdictions that have introduced an ETS—such as the EU and California. In both cases ETS form part of a suite of regulatory measures designed to support a clean energy transition.[202] This "regulatory mix" approach, if well designed, may offer advantages over a "single instrument" approach by enhancing flexibility, resilience and allowing for the strengths of one mechanism to compensate for the weaknesses of another.[203] In an environment of political uncertainty over the direction of climate policy, a redundancy in regulatory measures across or between different levels of governance may also provide a form of insulation against political vicissitudes and market uncertainties.[204]

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201. GARNAUT (2008), *supra* note 27, at 353.

202. Gunningham & Sinclair, *supra* note 15, at 50.

203. *Id.*

204. Tim Bonyhady, *The New Australian Climate Law*, *in* CLIMATE LAW IN AUSTRALIA 8, 24–26 (2007); Lazarus, *supra* note 184, at 1206. In practical terms, some of the previous concerns about overlapping regulatory requirements in Australia's federal system have abated with the roll-back of state climate laws and policies. A prominent example is amendments made to Victoria's *Climate Change Act 2010* to remove the Act's emissions reduction target and scale back regulatory powers to address GHG emissions. *See Climate Change and Environment Protection Amendment Act 2012* (Vic) (Austl.). These changes were ostensibly made on the basis that a national carbon price emphasizes the need for consistent intergovernmental policies. *See* VICTORIAN GOVERNMENT RESPONSE TO THE CLIMATE CHANGE ACT REVIEW 3–4 (2012), *available at* http://www.climatechange.vic.gov.au/__data/assets/pdf_file/0010/136486/CCAREV-Report_online.pdf. In reality, transitions to conservative governments, in many states, have seen state governments back away from progressive climate change policies and actions. This is particularly the case in eastern seaboard states such as Queensland, New South Wales, and Victoria. For example, in Queensland, the Premier has declared "we are in the coal business." Kathleen Donaghey & AAP, *Premier Campbell Newman Will Not Halt Port and Industry Development on Queensland's Coast to Protect Great Barrier Reef*, COURIERMAIL.COM.AU (June 2, 2012, 1:56 PM), http://www.couriermail.com.au/news/queensland/premier-campbell-newman-will-not-halt-port-and-industry-development-on-queenslands-coast-to-protect-great-barrier-reef/story-e6freoof-1226381294353. The Premier has also overseen a rapid dismantling of environmental laws and the environmental state bureaucracy. *See Environmental Protection*

In any event, there had been recent indications in Australia that the view that carbon pricing should be the sole and central policy for addressing domestic GHG emissions was shifting in favor of a more pluralist approach. The Gillard government's clean energy policy package—while giving a central role to the carbon pricing mechanism—envisaged a range of other supporting measures for renewable energy, energy efficiency, and carbon sequestration in the land sector (e.g., the CFI).[205] In the area of land use and planning, there has long been resistance to the idea of subjecting development proposals with significant GHG emissions to federal environmental assessment and approval requirements under the Environment Protection and Biodiversity Conservation Act 1999 (Australia's equivalent of the National Environmental Policy Act).[206] Despite this, in June 2013 the federal parliament passed an amendment instituting a new assessment "trigger" for coal seam gas[207] or "large" coal mining developments with significant impacts on water resources.[208]

In its review of Australia's RET scheme, the Climate Change Authority also cautiously endorsed a continuing role for complementary policy measures such as the RET.[209] The Authority particularly emphasized the benefits that the RET might offer in mitigating the risk that uncertainty over the carbon price (in Australia and internationally) suppresses investment in low-emissions technologies.[210] Consequently the Authority concluded: "In the current policy environment, the RET can be seen as being complementary to the carbon price, as a transitional measure, while a carbon price is being established, its future becomes more certain, and price levels

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(Greentape Reduction) and Other Legislation Amendment Act 2012 (Qld) (Austl.).

205. COMBET, *supra* note 2, at 42–47.

206. *See* Andrew Macintosh, *The Greenhouse Trigger: Where Did It Go and What of Its Future?*, *in* CLIMATE LAW IN AUSTRALIA 46 (2007) (providing an overview of the history of previous GHG trigger proposals).

207. In the United States it is more commonly known as coal bed methane. Coal seam gas, often harvested by new hydraulic fracturing techniques (fracking), has given rise to similar controversy in Australia as in the United States. *See* Samantha Hepburn, *The Importance of the Federal Coal Seam Gas Water Trigger*, 28 AUSTL. ENV'T REV. 612 (2013).

208. *Environment Protection and Biodiversity Conservation Amendment Act 2013* (Cth) (Austl.).

209. CLIMATE CHANGE AUTH., *supra* note 95, at 36.

210. *Id.*

adjust to reflect Australia's long-term emissions reduction goals."[211] Perhaps even more telling was Professor Garnaut's submission to the review, which reversed his long-held view that the RET should be phased out. Instead Garnaut argued for retention of the RET on the basis that "acceptance of the Renewable Energy Target by both sides of partisan politics in Australia means that it can now provide a more secure basis than politically-contested carbon pricing for emissions-reducing investments in the electricity sector."[212]

IV. CONCLUSION

Early experience with the carbon pricing mechanism in Australia suggests legal and policy reforms to institute market measures directed to GHG emissions reduction have considerable potential to drive an economy-wide energy transformation. In addition, the common carbon commodity created under an ETS facilitates linkage with similar schemes in other jurisdictions, potentially laying the groundwork for a transnational carbon market. Nonetheless, the effectiveness of an ETS as a measure to drive clean energy uptake is heavily dependent upon a robust carbon price. Problems of oversupply of carbon units, overly-generous industry support provisions that allocate many free permits, and political uncertainty over the future of climate policy can weaken the carbon price, and hence the effectiveness of an ETS in contributing to a clean energy transition. Such problems lend support to the notion that an ETS or carbon price should only ever be one piece of the regulatory puzzle adopted for addressing climate change and clean energy challenges.

At the time of writing, the Australian carbon pricing mechanism, and clean energy policies more broadly, confront many uncertainties. In the short term, a key concern is whether the carbon pricing scheme will continue, with the most likely prospect being repeal of the underlying legislation by the incoming Abbott government. Prior to the federal election, political uncertainty over the future of the scheme had already paralyzed the domestic carbon market, with institutional investors, in particular, reluctant to participate.[213] Australian

211. *Id.* at 35–36.
212. *Id.* at 31.
213. Jotzo et al., *supra* note 143, at 399–400.

businesses will now need to respond to yet another iteration of carbon policy as the Abbott government moves to add regulatory flesh to the bones of its Direct Action policy.

Despite the short-term prospects for the Australian carbon pricing mechanism, big emitters continue to view some form of carbon pricing as likely to reemerge in the medium-to-long term. In a 2012 study of expectations about climate change laws conducted by the Australian National University's Crawford School of Public Policy, forty percent of the liable entities, carbon financiers, and scheme experts interviewed expected the carbon pricing mechanism to be repealed, but only twenty percent thought there would not be a carbon pricing scheme in Australia by 2020.[214] These results "pu[t] the spotlight back on to the uncertainty that is dominating the area."[215] Such uncertainties significantly complicate investment decisions in the energy sector, which tend to plan on a thirty-year, rather than a three-year electoral time horizon. From this perspective, the strongest prospects for instituting a "clean energy future" in Australia and elsewhere lie in a stable carbon pricing scheme with independent supporting institutional infrastructure designed to ensure the credibility and environmental integrity of the scheme over time. Unfortunately for Australia, this prospect now seems out of reach.

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214. *Id.*

215. Adam Morton, *Big Polluters Convinced Carbon Price Is Here to Stay*, SYDNEY MORNING HERALD, July 5, 2012, News & Features, at 4 (quoting Frank Jotzo, one of the report's authors).

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